REMARKS

The following remarks are provided in response to the Office Action ("office action") mailed November 1, 2007 in which the office action:

- rejected claims 32 and 33 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.
- rejected claims 13, 14, 16-18, 20-25, 32 and 33 under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over US 6,979,647 to Bojkov (hereinafter Bojkov).

The Applicants respectfully request reconsideration of the above referenced patent application for the following reasons:

Claims 32 and 33 rejection under 35 U.S.C. §112

Claims 32 and 33 are rejected under 35 U.S.C. §112 first paragraph, as failing to comply with the written description requirement. Specifically, claims 32 and 33 recite that the film is metallic and an alloy "comprised of at least two different metals."

The Applicants respectfully point out that support for "an alloy comprised of at least two different metals" can be found in, e.g., paragraph [0031] which states in part, "the chelating agents may be used in proportion to the proportion of the **respective metals of the alloy**." Further support can be found in, e.g., paragraph [0035] which states in part, "The chelating agents are specifically tailored to bind with the particular **metal or metals of the metal film**." As the office action points out, "An alloy can include one metal mixed with a nonmetal." (*See* office action, p. 3, first paragraph.)

However, one of ordinary skill in the art would have known that distinguishing language such as "respective metals" and "metal or metals" means that an alloy could be "comprised of at least two different metals," as claimed by the Applicants.

Claims 13, 14, 16-18, 20-25, 32 and 33 rejection under 35 U.S.C. §102(e) or §103(a)

Claims 13, 14, 16-18, 20-25, 32 and 33 are rejected under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over US 6,979,647 to Bojkov (hereinafter Bojkov).

Independent claim 13, from which claims 14, 16, 17, 22, 23 and 32 depend, includes the elements "*selecting two or more chelating agents based upon the metals contained in the first metallic film*" and "*using the two or more chelating agents to remove the undesired portion of the first metallic film.*" That is, at least two different species of chelating agents are selected to etch a metallic film based on the composition of the metallic film. Independent claim 18, from which claims 20, 21, 24, 25 and 33 depend, include similar elements. Bojkov fails to disclose "selecting two or more chelating agents based upon the metals contained in the first metallic film" and "using the two or more chelating agents to remove the undesired portion of the first metallic film." Bojkov does disclose an "etchant solution [which] contains a chelating agent that bonds ions from the seed layer." (*See* Bojkov, Abstract.) However, the Applicants respectfully disagree with the office action's position that Bojkov discloses using two or more species of chelating agents in an etchant solution. (*See* office action, p. 4, second paragraph.) The office action points to, e.g., col. 6, lines 42-45 of Bojkov to disclose the term

"chelating agents." Col. 6, lines 42-45 of Bojkov states,

> "It has been demonstrated for the example of copper that without the presence of **chelating agents**, the re-deposition can result in a 10 to 30% elemental copper film deposited on the outermost layer." (Emphasis added.)

It is well known in the art that typical chelating agents can only bind one metal atom or ion at a time. Thus, a film containing many atoms or ions would require an etchant having many chelating agents. The use of plural "chelating agents" does not, however, indicate that more than one species of chelating agent is used in an etchant of Bojkov. In fact, the example from Bojkov provided above refers only to the etching of a copper film (i.e. a single metal-species film). Thus, one of skill in the art would not take the use of plural "chelating agents" in Bojkov to indicate anything other than more than one of the same species of chelating agent. This interpretation of "chelating agents," i.e. to only mean more than one of the same species of chelating agent, is further supported in col. 5, lines 27-31 of Bojkov (also pointed out by the office action) which states,

> "According to the present invention, the preferred method is to add **chelating agents** to solution **501**, which bind the seed ions into chemical complexes having a strong binding energy, or association constant." (Emphasis added.)

Like the example discussed above, the seed ions in this embodiment of Bojkov are only described as being copper ions. (*See* Bojkov, col. 5, lines 19-20.) Thus, again, one of skill in the art would not take the use of plural "chelating agents" in Bojkov to indicate anything other than more than one of the same species of chelating agent.

Furthermore, the office action states that the Applicants' disclosure "appears to be similar to the teachings of Bojkov which mentions single chelating agents in some areas

of the specification and then chelating agents in other areas." (*See* office action, p. 5, first paragraph.) On the contrary, the Applicants' specification states in paragraph [0031],

> "Multiple tailored chelating agents, each tailored to target a specific metal may be used in conjunction to target a specific alloy. For such an embodiment, the chelating agents may be used in proportion to the proportion of the respective metals of the alloy."

Thus, the term "chelating agents" is used in the Applicants' specification to refer to more than one species of chelating agent, wherein the more than one species may be used "in proportion to the proportion of the respective metals of the alloy." Thus, **Bojkov discloses using more than one of the same species of a chelating agent**, whereas **the Applicants teach and claim using two or more species of chelating agents**.

New Claims

New claims 34-40 recite similar elements to claims 13, 14, 16, 17, 22, 23 and 32, respectively. However, the elements "*depositing a layer of photoresist on at least the first metallic film*" and "*patterning the photoresist such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed*" in claim 13 are replaced with the element "*masking the first metallic film such that a desired portion of the first metallic film is masked and an undesired portion of the first metallic film is exposed*" in claim 34 to clarify the scope of the subject matter. Applicants note that the newly added claims are allowable in view of the cited reference for at least the same arguments as presented above.

CONCLUSION

The Applicants submit that they have overcome the office action's rejections of the claims and that they have the right to claim the invention as set forth in the listed claims. The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Pursuant to 37 C.F.R. 1.136(a)(3), the Applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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January 30, 2008
Date

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